Salient Characteristics of the Spinning DFing Antenna

The antenna shall consist of the following major units as a minimum:

1) Antenna Control Unit (ACU)
   The Antenna Control Unit shall provide control of the Azimuth Positioner to perform all motion functions. This controller shall send movement commands to the Servo Driver Unit, and will accept velocity feedback from the positioner's motor, while the positioner's encoder shall provide position feedback. The ACU shall operate only under Remote State, and shall permit a host computer to link up using RS-422 / RS-232 communications to invoke the modes: STAND-BY, SLAVE RATE, SLAVE POSITION, POINT, SEARCH, and SEARCH 360.

2) Servo Driver Unit (SDU)
   The SDU shall contain the power supply and the servo amplifier needed to drive the positioner's motor according to the movement command issued from the Antenna Control Unit.

3) Azimuth Positioner (Pedestal)
   The Azimuth Positioner shall provide a selectable range from 0 to 200 rpm (or higher) for Azimuth rotation. It shall contain an Electro-mechanical brake on power-fail and for stowage. It shall include a single brushless servomotor, an absolute 13-bit encoder, and a rotary joint for passing on the antenna RF outputs.

4) High Gain Directional Antennae (0.5 to 1 GHz, 1 to 18 GHz, & 18-40 GHz)
   The RF output signals of these antennae shall be multiplexed and sent to the DFing system via the pedestal's rotary joint. The antennae shall be mounted on the Positioner and shall be covered by the Radome.

5) Omni Antenna (0.5 to 18 GHz & 18 to 40 GHz)
   This antenna shall be mounted on top of the Radome with it's RF output signal directly connected to the DFing system

6) Radome
   The Radome shall cover the High Gain Directional Antennae for protection from dust and weather damage by providing a water/air tight enclosure, and shall stand up to winds of up to 85 knots.. It shall be designed to prevent internal refections that may cause interference to the antenna pattern or signal.

7) Primary Power
   The primary power supply shall be 110V ± 20%, 50-70 Hz, Single phase.